



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.2910

Job Sheet 168215



Part No: 646.2910

Job Qty: 6 Ea

Part Name: Deflector



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/13/17

Job Tracking No:

Due Date: 12/1/17

Created By: Linda Lacelle

Type: Stock

Description:

Customer: Heliswiss Iberica SA (CHELI02)

Hangar 4, Lado Norte, Aeropuerto De Sabadell, Barcelona Sabadell, , 08205 Spain ph:011 34 93 720 6090
fx:34-937-100130.

Note: DWG REV N/C2 IPP REV:A NEW ISSUE 13-04-18 JLM VERIFIED BY:DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea	11/30/17	11/30/17	0.00	0.00	Start Up Machining		J.C.-L. 17-12-14
100	Bandsaw	6 pcs	11/30/17	11/30/17	0.00	0.01	Bandsaw1		J.C.-L. 17-12-14
110	CNC Vertical Machining	6 pcs	12/1/17	12/1/17	0.15	4.00	HAAS 1		J.C.-L. 17-12-14
120	QC	6 pcs	12/1/17	12/1/17	0.00	0.00	QC2		J.C.-L. 17-12-14
130	QC	6 pcs	12/1/17	12/1/17	0.00	0.00	QC8		MIP 18/01/02
140	Outsource	6 pcs	12/1/17	12/1/17			ATG001-VC	Outsource 4	AT 18/02/12
150	Packaging	6 pcs	12/1/17	12/1/17	0.00	0.00	Packaging2		AT 18/03/12
155	QC	6 pcs	12/1/17	12/1/17	0.00	0.00	QC6		AT 18/03/12
180	Packaging	6 pcs	12/1/17	12/1/17	0.00	0.00	Packaging3	CCK050	FEB 23 2018
190	QC21-SA	6 Ea	12/1/17	12/1/17	0.00	0.00	QC21		FEB 26 2018

Part Op 100 - 42.600" long

Descriptions: 140 - Issue P/O to ATG :

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

Hard Anodize, Color Black / Prime as Per Draw
646.2900

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	646.2900E	22	65	0	0

Part Specifications

Specifications could not be found.

Plex 11/13/17 3:56 PM dart.boucher.sylvie



QA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____ Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
	Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐			
Date: _____	Step #: _____	QTY Effective: _____			MRB (QSI042) Approval		
Description Work Order Deviation		Disposition				Completed By	
						Lead hand / Supervisor Approval Verification	

Root Cause		
Environment ☐	No Re-verification ☐	Pressure/Forced ☐
Design ☐	Operator ☐	Bending ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐
Material ☐	Use for Testing ☐	Cuffs ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐
Past Expiry Date ☐	Manufacturing Process ☐	
Misidentified ☐	Past Due ☐	OTHER: ☐

Job No: 168215
Mfg Date: 12/14/17

Start up Operation
646.2910
PART NO:
Revision:
Operation:
Change No:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE 03207			SHEET 1 OF 1	
	DWG NO. 646.2900	REV: N/C	PREPARED BY PB	DATE: 08/29/11	EFFECT ON DWG ☐ INC. ☒ UNINC.
	DWG TITLE: DEFLECTOR				
	APPROVED BY:	ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: CURRENT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE		REASON: ADDED ALTERNATE BASE MATERIAL			

SHEET 1, ZONE A2, NOTE 1 IS:

NOTES:

1

MATERIAL: 7075-T6 ALUMINUM PER AMS-QQ-A-225/9 OR AMS-QQ-A-250/12

2

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2,
COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER;
PRIME IAW MIL-P-23377J TYPE I CLASS N

3.

DEBURR AND BREAK ALL SHARP EDGES

4.

IDENTIFY IAW MPP-120

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 168215

DAS
30
9-89

NOV 16 2017

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:						
☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ BOM				CHANGE CATEGORY ☐ MAJOR ☒ MINOR		DER REVIEW REQUIRED ☐ YES ☒ NO

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimension ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

		646.2910	DEFLECTOR		
FIND #		PART #	DESCRIPTION	MAT'L	SPEC.
QTY			PARTS LIST		
NEXT ASSY (S):			APICAL INDUSTRIES		
646.4000			2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300		
ORIGINAL DATE: 01-01-01 DRAWN BY: DCH IN: HOF DATED APPROVAL:  UNIT L-5-C-0 CONTRACT NO.			DEFLECTOR		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMAL: .010 3 PLACE DECIMAL: .005 ANGLES			SOF. CAGE CODE: 646.2900 DWG. NO: 07M26 SCALE: NONE SHEET 1 OF 1		

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER :							

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Jean Francois Sauve

From: Pablo Bravo
Sent: December-21-17 11:18 AM
To: Jean Francois Sauve; Jason Gardiner
Subject: RE: 646.2910 Dwg. deviation

JF,

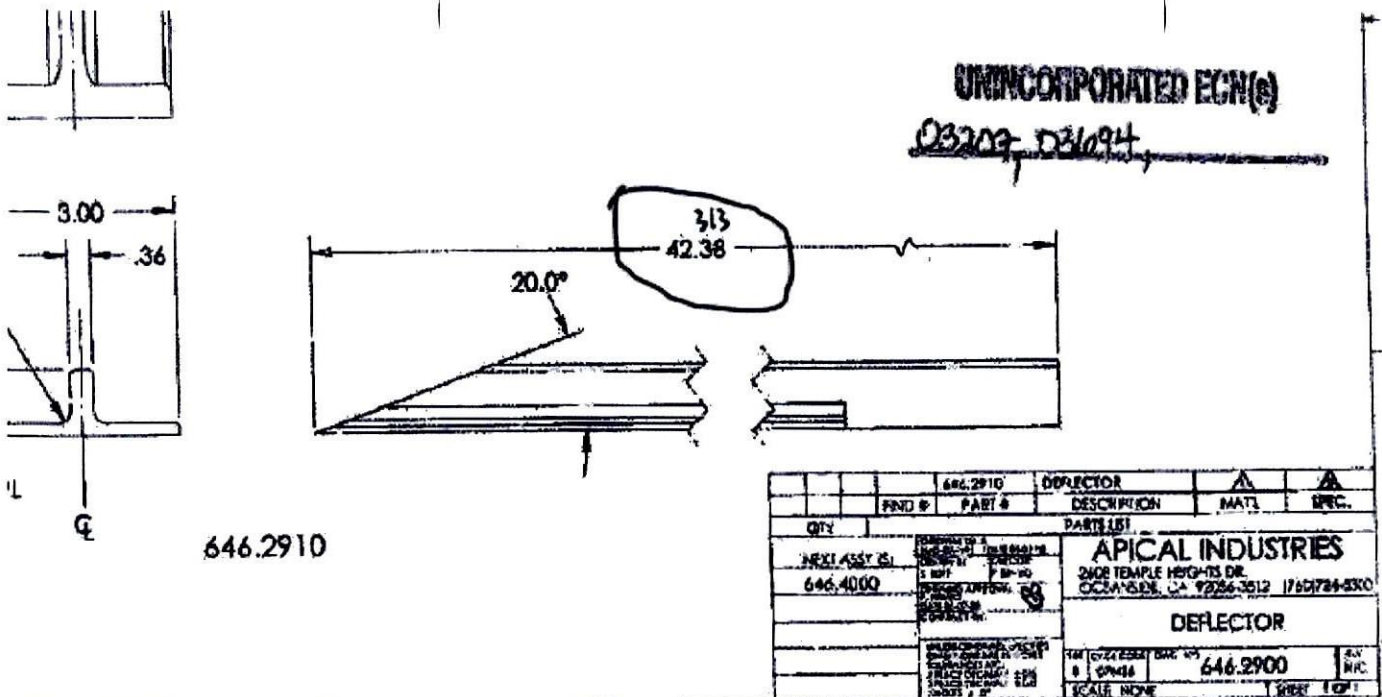
This should be okay. It might create a small edge distance issue with the mating part, but we can figure out a work around if it comes up.

Pablo

From: Jean Francois Sauve
Sent: Thursday, December 21, 2017 6:00 AM
To: Pablo Bravo <pbravo@dartaero.com>; Jason Gardiner <jgardiner@dartaero.com>
Subject: 646.2910 Dwg. deviation

Hi Guys,

Overall length on 646.2910 is at 42.313", is this acceptable?



Please advise.

Thanks

JEAN-FRANÇOIS SAUVÉ
Production Engineering Coordinator



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038727

Supplier: ATG001-VC
A.T.G. Industries Inc
731 INDUSTRIELLE ROAD
ROCKLAND
ON
K4K 1T2 Canada
Phone: 613-446-4544
Fax: 613-446-4556

Attention: Lalande, Marc-Andre

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO038727

PO Date: 1/5/18

Due Date: 1/12/18

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	169405	647.1513	Upper Deflector Issue P/O to ATG : Hard Anodize Color Black / Prime as per Dwg 647.1500 Rev. D	Firmed	1/11/18	12 pcs	0 pcs	12 pcs	\$12.45/pcs	\$149.40
Line Item Note #1 Priority - RUSH!!!										
2	168276	647.0114	Clip Issue P/O ATG, black anodize and prime as per dwg 647.0114 Rev. A	Firmed	1/30/17	50 pcs	0 pcs 50	50 pcs	\$10.20/pcs	\$510.00
3	168277	647.0115	Clip Issue P/O to ATG : 1- Hard Anodize Color Black And Prime as per Dwg 647.0100 Rev.A	Firmed	1/30/17	50 pcs	0 pcs 50	50 pcs	\$10.20/pcs	\$510.00
4	168273	647.0111	Panel Issue P/O to ATG : Hard Anodize, Color Black / Prime as per Dwg 647.0100 Rev. A	Firmed	1/30/17	15 pcs	15 pcs	15 pcs	\$39.95/pcs	\$599.25
5	168278	647.0116	Doubler Issue P/O ATG, black anodize and prime as per dwg 647.0116 Rev. A	Firmed	1/30/17	15 pcs	0 pcs	15 pcs	\$8.10/pcs	\$121.50
6	168286	647.1511	Lower Deflector Issue P/O to ATG : Hard Anodize Color Black, Prime as per Dwg 647.1500 Rev. D.	Firmed	1/30/17	4 pcs	0 pcs	4 pcs	\$11.85/pcs	\$47.40

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
7	169472	647.1612	Splice Plate Issue P/O ATG, black anodize and prime as per dwg 647.1612 Rev. A	Firmed	1/30/17	12 pcs	0 pcs	12 pcs	\$7.60/pcs	\$91.20
8	168031	647.3916	Deflector Issue P/O to ATG : Hard Anodize Color Black, Prime as per Dwg 647.3900 Rev. C	Firmed	1/30/17	2 pcs	0 pcs	2 pcs	\$18.80/pcs	\$37.60
9	168033	647.4114	Shim Issue P/O ATG, black anodize and prime as per dwg 647.4114 Rev. N/C	Firmed	1/30/17	10 pcs	0 pcs	10 pcs	\$6.95/pcs	\$69.50
10	168034	647.4115	Shim Issue P/O ATG, black anodize and prime as per dwg 647.4115 Rev. N/C	Firmed	1/30/17	10 pcs	0 pcs	10 pcs	\$6.95/pcs	\$69.50
11	169394	647.7913	Doubler Issue P/O ATG, black anodize and prime as per dwg 647.7913 Rev. A	Firmed	1/30/17	10 pcs	0 pcs	10 pcs	\$8.10/pcs	\$81.00
12	168215	646.2910	Deflector Issue P/O to ATG : Hard Anodize, Color Black / Prime As per Dwg 646.2900 Rev. N/C	Firmed	1/30/17	2 pcs	0 pcs	2 pcs	\$48.70/pcs	\$97.40
13	168247	646.3717	Doubler Issue P/O ATG, black anodize and prime as per dwg 646.3717 Rev. A	Firmed	1/30/17	20 pcs	0 pcs	20 pcs	\$6.95/pcs	\$139.00
14	168248	646.3718	Custom Washer Issue P/O ATG, black anodize and prime as per dwg 646.3718 Rev. A	Firmed	1/30/17	40 pcs	0 pcs	40 pcs	\$4.65/pcs	\$186.00
15	168249	646.3719	Doubler Issue P/O ATG, black anodize and prime as per dwg 646.3719 Rev. A	Firmed	1/30/17	12 pcs	0 pcs	12 pcs	\$6.95/pcs	\$83.40
16	168251	646.3811	Radius Block Issue P/O ATG, black anodize and prime as per dwg 646.3811 Rev. A	Firmed	1/30/17	10 pcs	0 pcs	10 pcs	\$7.25/pcs	\$72.50
17	168228	646.3312	Center Plate Issue P/O to ATG : Hard Anodize Color Black, Prime as per Dwg 646.3300 Rev. N/C	Firmed	1/30/17	8 pcs	0 pcs	8 pcs	\$12.75/pcs	\$102.00



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914605

Date: 09-Feb-18

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms	Ship Via
	OUR TRUCK
Quantity	Description
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.
2 ea	Part: 646.2910 Rev: N/C Deflector Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 22302 PO: PO038727 Line: 12
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>09/02/2018</u> Certified Signature: <u>[Signature]</u> Receiver Signature: _____ A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.	
Made in Canada.	